

outer surfaces of the sliding housings **101a** and **101b** are partially opened or closed by the folding cases **102a** and **102b**. Therefore, the keys **115** may be installed in an area opened or closed by the folding cases **102a** and **102b**.

[0053] In comparison between FIG. 4 illustrating folding state of the sliding housings **101a** and **101b** and FIG. 8 illustrating unfolding (open) state of the sliding housings **101a** and **101b**, it is noted that when the sliding housings **101a** and **101b** are unfolded, a portion of the outer surfaces of the sliding housings **101a** and **101b** are closed by the folding cases **102a** and **102b** but the portion of the outer surfaces of the sliding housings **101a** and **101b** are opened by the folding cases **102a** and **102b** when they are folded. The keys **115** are installed in the portion of the outer surfaces of the sliding housings **101a** and **101b** being opened or closed by the folding cases **102a** and **102b**. Hence, the keys **115** may be instated such that they are exposed for operation when the sliding housings **101a** and **101b** are folded but covered or hidden by the folding cases **102a** and **102b** when the sliding housings **101a** and **101b** are unfolded or opened.

[0054] FIG. 4 is a side view of the portable terminal **100** illustrated in FIG. 3, FIG. 5 is a schematic view illustrating the structure of the hinge device in the portable terminal **100** illustrated in FIG. 4, FIGS. 6 and 7 illustrate the portable terminal **100** opened at 90°, and FIGS. 8 and 9 illustrate the portable terminal opened at 180°. It is noted from FIGS. 4 to 9, when the portable terminal **100** is opened from a folded state, the outer surfaces of the sliding housings **101a** and **101b**, particularly the outer surfaces of the engagement portions **113** are gradually covered by the folding cases **102a** and **102b**. For example, when the sliding housings **101a** and **101b** are folded, the engagement portions **113** are opened or exposed by about 5 mm. When the sliding housings **101a** and **101b** are unfolded, the engagement portions **113** are opened or exposed by about 1 mm.

[0055] Referring to FIGS. 4 and 5, when the sliding housings **101a** and **101b** are folded, the guide protrusions **119** are positioned at most outermost location of the guide grooves **147**. The guide grooves **146** are extended toward the centers of the first sun gears **143** near to an outer edge of the engagement plate **141**, that is, toward the hinge axes **A1** and **A2**. Since the guide grooves **147** are formed according to the trajectories of the guide protrusions **119** that move along with the rotation of the sliding housings **101a** and **101b**, the shapes or extended directions of the guide grooves **147** may be changed according to the positions of the guide protrusions **119**.

[0056] Referring to FIGS. 6 and 7, when the sliding housings **101a** and **101b** rotate and thus are opened at 90°, the guide protrusions **119** move inward in the guide grooves **147**, that is, toward their nearby hinge axes **A1** and **A2**.

[0057] Referring to FIGS. 8 and 9, when the sliding housings **101a** and **101b** further rotate and thus are opened at 180°, the guide protrusions **119** return outward in the guide grooves **147**. The positions of the guide protrusions **119** are limited to certain points of the guide grooves **147** depending on the rotation positions of the sliding housings **101a** and **101b**. Hence, the sliding housings **101a** and **101b** may be installed not to deviate from the folding cases **102a** and **102b**. In addition, during the rotation of the sliding housings **101a** and **101b**, the displays **111** may be kept in contact at their one corners by the configuration of the guide protrusions **119** and the guide grooves **147**.

[0058] Although it is preferred that the slide housing **101a** and **101b**, particularly the displays **111** are in a close contact relationship with each other, in alternate embodiment, it is possible to have only one display instead of two supported by the respective slide housing.

[0059] Further, one of the purposes of the present invention is to allow a user to conveniently use a multimedia service by providing a display of a sufficient size. Therefore, the present invention is intended to expand a display by configuring a pair of foldable housings so that the housings contact with each other at corners, one from each when they are opened at 180° and thus displays provided on the respective housings are connected with each other. Therefore, the displays **111** may be brought into close contact when the sliding housings **101a** and **101b** are opened at 180° without the need for being kept in close contact with each other during rotation of the sliding housings **101a** and **101b**.

[0060] As is apparent from the above description, the portable terminal of the present invention is configured such that the displays installed in the respective sliding housings are combined to yield a single display. As a result, the portable terminal is provided with an expanded display area. Even when the sliding housings are opened, the displays are kept in close contact at both ends of the sliding housings. Hence, the difference between the two displays can be unnoticeable. Alternatively, when the displays are operated independently, a multitasking function can be performed conveniently. Further, the portable terminal can play a music file or the like conveniently without being opened by installing hot keys in an area that is opened and closed via action of the folding cases.

[0061] While the invention has been shown and described with reference to certain exemplary embodiments of the present invention thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the present invention as defined by the appended claims and their equivalents.

What is claimed is:

1. A portable terminal comprising:

- a hinge device for providing a pair of hinge axes extended in parallel;
- a pair of folding cases engaged with the hinge device, for rotating upon one hinge axis of the hinge axes, respectively; and
- a pair of sliding housings slidably installed in the respective folding cases,

wherein the folding cases rotate in a folding direction or in an unfolding direction via the hinge device, and wherein as the folding cases rotate, the sliding housings slide on the folding cases and when the sliding housings are opened at 180° with respect to each other, one end of the sliding housing is in contact with another end of the other sliding housing.

2. The portable terminal of claim 1, wherein the hinge device comprises:

- a cover member including a cover portion for covering one surface of each of the folding cases in a folded state, and module installation portions formed at both ends of the cover portion for covering both side ends of the folding cases; and
- a hinge module installed on at least one of the module installation portions.